



## Preterm birth during an extreme weather event in Quebec, Canada: A "Natural Experiment"

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### Abstract:

To clarify the relationship between preterm birth (PTB) and extreme weather events, we evaluated PTB during a January 1998 ice storm that had led to a provincial emergency in the middle of winter in the province of Quebec, Canada. Singleton live births for three periods (1993-1997, 1998, 1999-2003) were obtained (N Euro Surveillance (Bulletin Européen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 855,320). PTB was defined as gestational age < 37 completed weeks. Births in the Triangle of Darkness, the area most strongly affected by the storm, were geocoded. Multivariate logistic regression was used to calculate the likelihood of PTB for the Triangle relative to metropolitan Montreal, adjusting for maternal age, education, civil status, maternal birthplace, and previous deliveries. Associations for 1998 relative to other periods were evaluated. Short-term (January-February) and long-term (March-October) exposure periods were examined. The proportion PTB for 1998 January-February births in the Triangle (8.7%) was high compared with 1998 March-October births (6.0%) and with the corresponding proportions for 1993-1997 (6.2%) and 1999-2003 (6.9%). Covariate-adjusted odds of PTB for January-February 1998 were 27% higher for the Triangle relative to metropolitan Montreal, though precision was low. Furthermore, adjusted odds were 28% higher for 1998 relative to 1999-2003, despite increasing rates of PTB over time. Odds were not elevated over a long-term exposure period. This study suggests a weak association between PTB and exposure to extreme weather for the two months following an ice storm, but not for later periods after the storm.

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### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Extreme Weather Event

**Extreme Weather Event:** Other Extreme Event

**Extreme Weather Event (other):** Ice storm

#### Geographic Feature:

resource focuses on specific type of geography

Urban

# Climate Change and Human Health Literature Portal

## **Geographic Location:**

resource focuses on specific location

Non-United States

**Non-United States:** Non-U.S. North America

## **Health Impact:**

specification of health effect or disease related to climate change exposure

Developmental Effect

**Developmental Effect:** Reproductive

## **Medical Community Engagement:**

resource focus on how the medical community discusses or acts to address health impacts of climate change

A focus of content

## **Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation

**Population of Concern:** A focus of content

## **Population of Concern:**

populations at particular risk or vulnerability to climate change impacts

Children, Low Socioeconomic Status, Pregnant Women

## **Resource Type:**

format or standard characteristic of resource

Research Article

## **Timescale:**

time period studied

Time Scale Unspecified

## **Vulnerability/Impact Assessment:**

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content